

REMARKS

The indication that claims 4 - 6 and 13 - 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims is acknowledged. It is noted that such claims have been retained in dependent form at this time with the parent claims being amended to clarify features of the present invention so as to more clearly distinguish over the cited art, as will become clearly from the following discussion.

The Examiner is invited to contact the undersigned attorney to schedule an interview upon taking this application up for examination if deemed necessary.

At the outset, applicants note that the present invention is directed to a liquid crystal display device of the form as illustrated in Figs. 1 and 2 of the drawings of this application wherein a display area as shown in Fig. 2 is separated or at least partially delimited from a peripheral area of the substrate by way of a sealing material 13, as generally represented by the dashed line in Fig. 2, and more clearly seen in Fig. 1 wherein to the left side of the sealing material in Fig. 1, it is indicated LC representing a liquid crystal part of the display area of the liquid crystal panel or substrate, and to the right side of the sealing material 13, the vertical scanning circuits 7 and the video signal driver circuits 8 are provided as shown in Fig. 2, which is a peripheral area of the substrate. As described in the specification of this application, applicants have determined that corrosion occurs in signal lines which extend from the inside of the region surrounded by the sealing material as represented by the display area to the peripheral area which is outside of the sealing material. As described in the first full paragraph at page 4 of the specification, an

object of the present invention is to provide a liquid crystal display device which is capable of preventing corrosion from occurring in signal lines which are formed to extend from inside an area of a main surface of one of a pair of substrates (the display area) into an outside area (the peripheral area) wherein the inside area is generally surrounded by a sealing material. As described in accordance with the present invention, the signal lines which are formed to extend beyond the sealing material into the peripheral area are covered with a stacked layer made of a first insulating film, a semiconductor layer and a second insulating film, represented by the layers and films 4, 6 and 9 formed on the signal line 2 as shown in Fig. 1, and with this structural arrangement, even if defects, such as pin holes, occur in each of the first insulating film, the semiconductor layer and a second insulating film, it will be extremely rare for the portions of the defects to be superposed on one another on the signal lines, and so almost no external influence is exerted over the signal lines due to these defects. In this way, as described in the paragraph bridging pages 4 and 5 of the specification, it is possible to avoid corrosion due to defects, such as pin holes, the material which covers the signal lines. Further, since each of the plurality of pixel areas in the display area is provided with a thin film transistor covered with a protective film, a first insulating film, a semiconductor layer and a second insulating film corresponding to a gate insulating film, semiconductor layer and insulating film provided in the peripheral area, the first insulating film, the semiconductor layer and the second insulating film can be sequentially formed in parallel during formation of each of the pixels so as to enable formation without any increase in the number of manufacturing steps. By the present amendment, the claims have been amended to clarify the aforementioned features.

Turning to each of independent claims 1, 9 and 18, such claims have been amended to clarify the feature that a sealing material 13, as illustrated in Fig. 1 is formed over the substrate and at least partially delimits a peripheral area of the substrate which is formed on one side of the sealing material. In accordance with the present invention, as illustrated in Fig. 1 to the right side or one side of the sealing material 13, which is the peripheral area, there is provided a first insulating film 4, a semiconductor layer 6 and a second insulating film 9, with a signal line 2 being formed under the first insulating film, the semiconductor layer and the second insulating film, or the first insulating film 4, semiconductor layer 6 and second insulating film 6 are formed over the signal line. Claims 1 and 9 further define the feature that the signal line extends over the substrate from the display area of the substrate into a peripheral area of the substrate beyond a sealing material which at least partially delimits the display area and the peripheral area of the substrate and with this structural arrangement as recited in each of independent claims 1, 9 and 18, the improvements as described above are obtained.

The rejection of claims 1 - 2, 9 - 11 and 18 - 20 under 35 USC 102(b) as being anticipated by US 5,847,781 (Ono et al) and the rejection of claims 3, 7 - 8, 12 and 16 - 17 under 35 USC 103(a) as being unpatentable over Ono et al, further in view of US 5,798,744 (Tanaka et al), such rejections are traversed insofar as they are applicable to the present claims and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 USC 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and

every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

With regard to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Turning first to Ono et al, applicants note that reference is made to Figure 8 of this patent which illustrates a display area designated as AR, which is at least partially surrounded by sealing material SL, and as is apparent, signal lines Tg and Td extend from the display area beyond the sealing material SL into a peripheral area. Applicants submit there is no disclosure or teaching in Ono et al of the structure of the covering of the signal lines Tg and Td, in the peripheral area, in terms of an insulating film, a semiconductor layer and another insulating film formed on such signal lines. While the Examiner refers to the signal lines such as a gate line GL in Fig. 3 of Ono et al and the layers formed thereon, it is readily apparent that Fig. 3 of Ono et al is a cross-sectional view of a portion of the display area of Fig. 1,

and there is no disclosure or teaching in Ono et al of the structural arrangement of the layers provided on the gate line GL, assuming the gate line represents a signal line Tg of Fig. 8, in the peripheral area of Fig. 8 of Ono et al, which outside of the display area and beyond the sealing material SL thereof. Applicants submit that there is no disclosure in Ono et al of this claimed structural arrangement at the peripheral area of the liquid crystal display device as claimed, it is readily apparent that Ono et al does not support the rejection under 35 USC 102 and applicants further submit that it cannot be considered obvious in the sense of 35 USC 103 to provide the claimed structural arrangement on a first insulating film, a semiconductor layer and a second insulating film over the signal line at the peripheral area of the display device in the manner set forth in the independent and dependent claims of this application. Thus, applicants submit that all claims patentably distinguish over Ono et al in the sense of 35 USC 102 and 35 USC 103. As to the combination with Tanaka et al, hereinagain, there is no disclosure or teaching of the structure of the signal line, as claimed in the peripheral area which extends beyond the sealing material. Accordingly, the combination of Ono et al and Tanaka et al fail to provide the claimed features as set forth in the independent and dependent claims in the sense of 35 USC 103 and all claims should be considered allowable thereover.

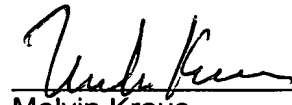
In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance and issuance of an action of favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli,

Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 501.38380CX1),
and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

A handwritten signature in black ink, appearing to read 'Melvin Kraus', is written over a horizontal line.

Melvin Kraus
Registration No. 22,466

MK/jla
(703) 312-6600